



# INSTRUCTIONS

-J03551

REV. 10-06-2004

Kit Number 36822-04

## SE HYDRAULIC CLUTCH SECONDARY ACTUATOR CYLINDER SERVICE KIT

### General

This kit is designed to service the hydraulic clutch secondary actuator (slave) cylinder for the Screamin' Eagle 6-Speed hydraulic side cover.

#### NOTE

To prevent the possibility of fluid leakage, the cover gasket **MUST** be replaced each time the cover is removed. A replacement gasket, Part Number 35148-03 is available separately from your Harley-Davidson Dealer.

See the Service Parts list for kit contents.

#### WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate Service Manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

#### NOTE

A Service Manual for your model and year motorcycle is available from your Harley-Davidson Dealer.

### Removing the Existing Components

Support the motorcycle securely on the jiffy stand on a firm, level surface.

#### WARNING

Perform this installation when the engine is cool. Working on or near the exhaust system when the engine is hot could result in severe burns. (00311a)

#### WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect battery cables (negative (-) cable first) before proceeding. (00307a)

#### WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

1. Refer to the SEAT and BATTERY sections of the Service Manual. Remove the seat and disconnect the battery cables, negative cable first.
2. Remove the right-side saddlebag, if so equipped. Refer to SADDLEBAG REMOVAL in the Service Manual.
3. To access the transmission side cover assembly, see EXHAUST SYSTEM REMOVAL in the Service Manual.

For some models, the right-side exhaust system will need to be removed. In most cases, you will need to perform at least the following:

- a. Loosen, but do not remove the front and rear header pipes at the cylinder heads.
- b. Loosen the exhaust support bracket at the starter.
- c. Loosen the exhaust system heat shields as needed to access the transmission side cover screws.
- d. Remove the clamp holding the rear exhaust pipe to the transmission bracket. Set aside for re-installation.
- e. Remove and retain the two bolts and lockwashers attaching the right-side muffler to the rear bracket.

#### CAUTION

D.O.T. 4 brake fluid will damage painted and molded-in color surfaces it comes in contact with. Always use caution and protect surfaces from spills whenever brake work is performed. Failure to comply can result in cosmetic damage. (00239a)

4. Remove the magnetic drain plug at the bottom-right side of the oil pan, and drain the transmission lubricant into a suitable container.
5. Remove and retain the filler plug/ dipstick for later installation See Figure 1. Remove and retain the six socket-head screws with washers (4 and 5) to free the transmission side cover (1) from the transmission case.
6. Actuate the clutch lever to break the cover seal. Remove the cover. Remove and discard the cover gasket (2).

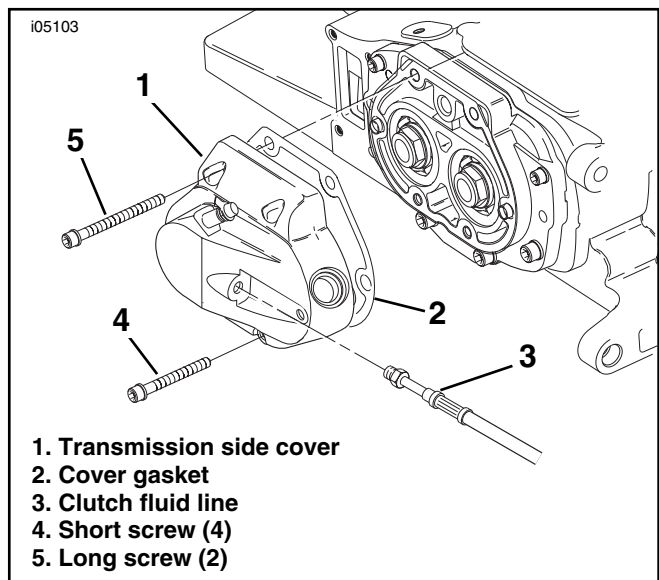


Figure 1. Transmission Side Cover Removal

### CAUTION

Remove clutch fluid lines carefully. Damage to seating surfaces can cause leakage. (00327a)

7. Disconnect the clutch-fluid line fitting from the transmission side cover. Direct the line into a suitable container to catch any fluid that leaks out.

### WARNING

Compressed air can pierce the skin and flying debris from compressed air could cause serious eye injury. Wear safety glasses when working with compressed air. Never use your hand to check for air leaks or to determine air flow rates. (00061a)

8. See the Service Parts illustration. Use an air hose to remove the hydraulic clutch piston.
  - Use a tapered, rubber-tipped nozzle on the air hose to prevent loss of air pressure or damage to the threads.
  - Apply low pressure compressed air to the fluid line fitting hole to remove the piston from the transmission side cover bore.
  - Wiggle the piston while pulling it from the bore for best results.
  - Discard the old piston and spring.

## Installing the New Components

### WARNING

Use denatured alcohol to clean clutch system components. Do not use mineral-based solvents (such as gasoline or paint thinner), which will deteriorate rubber parts even after assembly. Deterioration of these components can cause clutch failure, which could result in death or serious injury. (00296a)

1. Clean the inside of the transmission side cover bore with denatured alcohol. Wipe dry with a clean, lint-free cloth. Blow out the bore and fluid passage with a clean air supply. Do not use a wire or similar instrument to clean the passage.
2. Inspect the piston bore, and replace the transmission side cover if the bore shows signs of pitting or corrosion. Do not hone the bore for re-use.
3. Inspect the **new** piston, seal and wiper assembly and the **new** spring for dirt or damage. Apply the lubricant from the kit to the following areas before assembly:
  - the nose radius and outside diameter of the piston,
  - the outside diameter of the seal and wiper,
  - the inside of the piston bore.

### CAUTION

Avoid leakage. Prevent damage to piston or piston bore. Use non-metallic tools when servicing clutch actuator. (00328a)

4. Place the **new** spring inside the piston, seal and wiper assembly. Carefully insert the piston by hand into the bore of the transmission side cover. If the installation shows resistance, remove the piston and check that the seals and wipers are properly seated, and the spring is in place.

5. Place a **new** cover gasket (H-D Part Number 35148-03) over the hollow locating pins in the transmission housing. Line up the clutch-release cover on the locating pins.

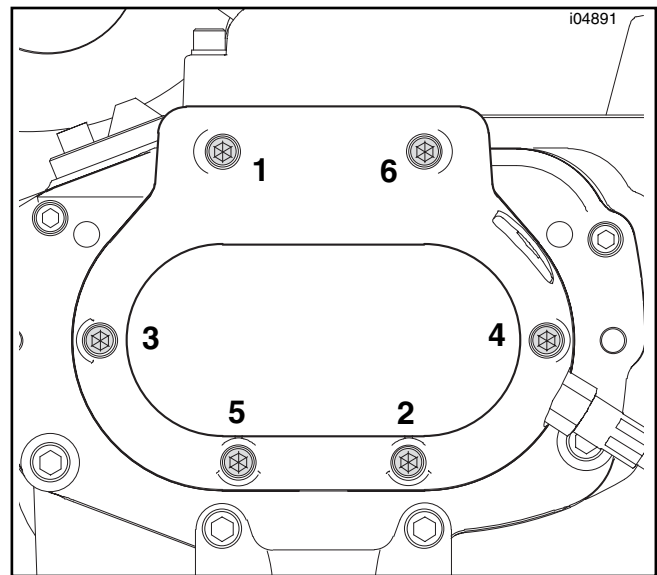


Figure 2. Transmission Side Cover Screw Torque Sequence

6. Loosely install the two 2-1/4 inch (57 mm) long screws (removed earlier) into the top two holes in the cover. Loosely install the four 1-1/2 inch (38 mm) long screws into the remaining four holes.
7. Refer to Figure 2. Tighten the cover screws, in the sequence shown, to 120-144 **in-lbs** (14-16 Nm).
8. Assemble the clutch-fluid line fitting to the transmission side cover. Torque the fitting to 80-115 **in-lbs** (9-13 Nm).

### NOTE

Position the clutch-fluid line to be at least 1/2 inch (12.7 mm) from the exhaust heat shield and at least 1 inch (25.4 mm) from the muffler or exhaust pipe.

## Bleeding the Clutch Fluid Line

### NOTE

Hydraulic Brake Fluid is referred to as clutch fluid in these instructions and in the Service Manuals. Do not use other types of fluid or mix fluids as they are not compatible. Refer to your owners manual for information on the correct hydraulic brake fluid for your model motorcycle.

### CAUTION

Direct contact of D.O.T. 5 brake fluid with eyes can cause eye irritation, swelling, and redness. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 5 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00144a)

### CAUTION

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

1. Refer to service manual or owners manual to determine the appropriate brake fluid. The master cylinder cover label lists the appropriate fluid as well.
2. Remove the bleeder cap from the transmission side cover bleeder valve. Install one end of a length of plastic tubing over the valve. Place the free end of the tube in a clean container.

### CAUTION

Do NOT allow dirt or debris to enter the clutch master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation of the clutch and equipment damage. (00205a)

3. Stand the motorcycle upright so that the master cylinder is in a level position. Remove the master-cylinder cover and gasket.

#### NOTE

DO NOT OVERFILL.

4. Add the appropriate type of brake fluid on 2005 Touring Models) to the master-cylinder reservoir until the fluid level is at or just below the fill line. Do not reuse old fluid. Only use fluid from a sealed container.
5. Activate the clutch lever 5-10 times.
6. Open the bleeder valve. Clutch fluid will flow from the bleeder valve through the tubing. It may take several minutes for fluid to exit the bleeder.
7. Once fluid exits the bleeder, close the bleeder valve.

#### NOTE

DO NOT OVERFILL.

8. If necessary, add additional clutch fluid to the master cylinder reservoir until the fluid level is at or just below the fill line.
9. Depress and hold the clutch hand-lever to build up hydraulic pressure.
10. Open the bleeder valve about one-half-turn. Clutch fluid will flow from the bleeder valve through the tubing. Close the bleeder valve when the clutch hand-lever has moved 50% to 75% of its full range of travel. Allow the clutch hand-lever to return slowly to its released position.
11. Repeat Steps 7 through 9 until all air bubbles are purged.
12. Tighten the bleeder valve to 80-100 in-lbs (9.0-11.3 Nm) and install the bleeder cap.
13. Again, if necessary, add clutch fluid to the master cylinder reservoir until the fluid level is at or just below the fill line.

14. Verify proper operation of the master-cylinder relief port. Actuate the clutch hand-lever. A slight spurt of fluid will break the fluid surface in the reservoir compartment if all internal components are working properly.

#### NOTE

The angular shape of the clutch master-cylinder cover makes one side thicker than the other.

15. Install the cover (with gasket) on the master-cylinder reservoir so that the **thicker** side is positioned above the clutch-line fitting. Fasten the cover to the reservoir with two Phillips screws. Tighten the screws to 6-8 in-lbs (0.7-0.9 Nm).

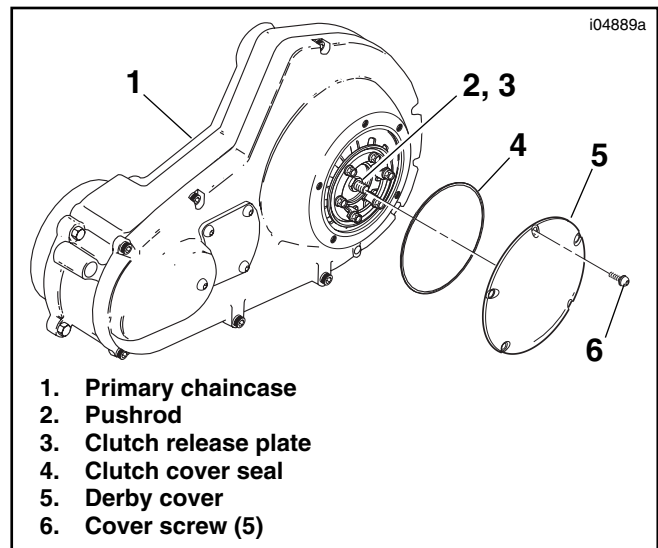


Figure 3. Clutch Inspection Cover

#### NOTE

The sight glass enables the rider to visually check clutch fluid level without removing the master-cylinder cover. When the reservoir is full, the sight glass is dark. As the fluid level drops, the glass lightens up to indicate this condition to the rider.

## Removing the Clutch-Inspection Cover

#### NOTE

Standing the motorcycle upright is required so fluid doesn't spill. Ensure that the vehicle is supported securely.

1. If necessary, remove the **left-side** passenger footpeg or footboard.
2. See Figure 3. Using a T27 TORX drive head, remove the clutch-inspection (derby) cover (5) from the primary chaincase (1).

## Measuring Clutch Plate Lift

1. Attach the standoff of a dial indicator to one of the 1/4-20 clutch-inspection (derby) cover mounting holes. Position the anvil to the end of the push rod.

### WARNING

Insufficient clutch-release plate movement can lead to difficulty or inability to shift, causing loss of control, which could result in death or serious injury. (00345a)

2. Actuate the clutch lever to measure the axial movement of the push rod and the clutch-release plate assembly. The axial movement needs to be **at least** 0.065 in. (1.65 mm).

### IMPORTANT

**Proper bleeding of the system will typically yield plate movement of greater than .065 in. (1.65 mm). If clutch release plate movement is less than .065 in., the system MUST BE RE-BLED.**

## Installing the Clutch-Inspection Cover

### Models with Quad Ring Seal

1. See Figure 3. Remove the quad-ring clutch-inspection cover seal (4) (2004 and later models use a gasket, H-D Part Number 25416-99C) from the groove in the primary chaincase cover. Wipe all lubricant from the seal and inspect it for cuts, tears or signs of deterioration. Replace if necessary.

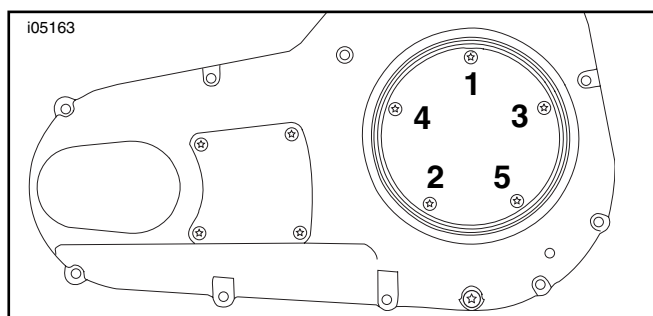


**Figure 4. Torque Sequence, Primary Chaincase Cover**

2. Swab all lubricant from the quad-ring groove (2004 and later models use a gasket, H-D Part Number 25416-99C)). Install the seal into the groove with the nubs contacting the groove walls.
3. Using a T27 TORX drive head, install the derby cover to the primary-chaincase cover with the five screws (with captive washers) removed earlier.
4. See Figure 4. Tighten the derby cover screws, in the sequence shown, to 84-108 **in-lbs** (10-12 Nm).

### Models with Clutch Inspection Cover Gasket

1. To avoid punching holes in the clutch inspection cover gasket or enlarging existing holes, install clutch inspection cover and **new** gasket as follows:
  - a. Align the triangular shaped hole in the gasket with the top hole in the clutch inspection cover. Be sure the rubber molding and the words "towards clutch" face the motorcycle.
  - b. Insert screw (with captive washer) through clutch inspection cover and carefully thread it all the way through triangular shaped hole in gasket. Do not push screw through hole.
  - c. Hang the clutch inspection cover on the primary chaincase cover flange by starting the top cover screw.
  - d. Start the remaining four screws (with captive washers).

- e. Using a T27 TORX drive head, alternately tighten screws to 84-108 **in-lbs** (10-12 Nm) in the pattern shown in Figure 4.

## Final Assembly

1. Check the "O"-ring on the transmission drain plug removed earlier for tears, cuts or general deterioration, and replace if necessary.
2. Install the drain plug and torque to 14-21 ft-lbs (19-28 Nm).

### CAUTION

**Do not over-tighten drain plug. Doing so could result in a lubricant leak. (00200a)**

3. Fill the transmission with the proper transmission lubricant. See the MAINTENANCE section of the Service Manual.
4. Check the "O"-ring on the filler plug/ dipstick for tears, cuts or general deterioration, and replace if necessary. Install the filler plug/dipstick into the clutch-release cover.

### CAUTION

**Be sure exhaust pipes do not contact frame or components. Contact will transmit vibration to the rider. (00348a)**

5. See EXHAUST SYSTEM INSTALLATION in the Service Manual. Re-install and tighten all exhaust-system components loosened or removed at the beginning of the installation. Any gaskets or clamps that were removed should be replaced with **new** parts.

### ⚠ WARNING

**Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)**

6. Connect the battery cables, positive cable first.
7. Refer to the Service Manual, and follow instructions to install the seat.

### ⚠ WARNING

**After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a).**

8. Test ride the motorcycle. If the clutch does not work properly, it may be necessary to re-bleed the clutch-fluid line.



# Service Parts

Part Number 36822-04

Date 10/04

## Hydraulic Clutch Slave Cylinder Service Kit

i05104

| Item | Description                     | Part Number |
|------|---------------------------------|-------------|
| 1    | Piston, seal and wiper assembly | Not sold    |
| 2    | Spring                          | Not sold    |
| 3    | Lubricant                       | Not sold    |

